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of Botany," Mr. Phillips gives some facts respecting the employment of tincture of iodine for this purpose. The re-agent used is the common tincture of iodine, diluted to one-half with alcohol.

A drop of this is placed on a glass slide with a thin section of the hymenium and subjected to a slight pressure, under a magnifying power of 300–400 diameters. The blue-purple or purple-black color which appears in the investigation of some *Pezizas*, appears to be specifically characteristic. Thus *Peziza melaloma* A. S., no reaction. *P. badia* P., summits of asci pale blue. *P. repanda* Wahl., apices of asci blue. *P. trechispora* B. and Br., tips of paraphyses deep purple-blue. *P. vitellina* Pers., tips of paraphyses deep purple-black.

It may be worthy of note that owing to the blue color obtained in 1858, by Mr. F. Curry, in the examination of a species of *Tuber*, the name *Amylocarpus* was given as a generic appellation.

A NEW FLY-TRAP.—Professor A. Braun, in a communication to a Botanical Society, has briefly described a new form of vegetable fly-trap. (Botan. Zeitung, Sept. 20, 1872). The plant referred to is an East Indian Papilionacea, *Desmodium triquetrum* DC.

The simple leaf with a margined petiole feels rough to the touch, and remains hanging lightly to the finger which has touched it. Little flies, which alight on the leaf, are held by an invisible power and die after ineffectual struggles to free themselves from it. One can often see six or eight flies fastened in this way to the upper surface of the blade; less often, and more widely scattered, on the underside. The hairs which act thus are distributed over the whole surface and appear to the naked eye as scarcely noticeable white points: they are not over 0.08–0.10 millimetres long, and 0.01 millimetres thick, and consist of two cells. The under cell is one-fourth of the whole length. The upper cell is pointed like a fish-hook with a sharp barb. These acute angles, invisible without a lens, are what fasten the insect down.

Beside the angled hairs there are others on the leaf. They are found especially on the nerves, and have a much more appreciable length and thickness (0.50 and 0.01 millimetres), they are unicellular, blunt, and on the upper surface beset with little projections.

ZOOLOGY.

A FOUR-LEGGED ROCK LARK.—On November 23rd, while walking on the seashore in the vicinity of Plymouth, I saw the most

extraordinary *lusus nature* in the shape of a rock lark (*Anthus petrosus*) that I ever saw in my life. It had four legs and no tail (at least where the tail should have been), but that appendage was placed just above the left eye, and sticking out behind like a long depressed crest, — indeed it was a perfect “nightmare” of a bird, such a one as you might dream about — the extra legs were dangling from the extremity of its body. It was feeding on a heap of decayed seaweed on the shore. Unfortunately, I had no gun with me or I could have shot it a hundred times over, but as I had a field glass with me I could examine it as distinctly as though I had had it in my hand. The next day I returned to the spot with my gun and had a shot at it at once, but the gun “hanging fire” I did not quite kill it, and some children running to the spot before I could load again, it managed to flit away where I could not see it.

A “lusus” is not so wonderful in a bird just hatched, but seldom lives long, whereas this was a lively full-grown rock lark.— J. GATCOMBE, *Plymouth, England*.

BIRTHS OF ANIMALS IN THE CENTRAL PARK MENAGERIE.—Puma (*Felis concolor*). Two cubs were born August 24, 1872; period of gestation, thirteen weeks; spotted; born blind, eyes open on the eighth day; very playful. The puma has seldom more than two at a birth.

Leopard (*Felis leopardus*). Two cubs were born October 28, 1872; period of gestation, thirteen weeks; markings similar to that of the mother; born blind, eyes open on the eighth day.

Spotted Hyæna (*Hyæna crocuta*). Two cubs were born, one January 5, 1873, the other twenty-four hours after; covered with a soft hair half an inch long, of a uniformly black color, no indication of spots; born with eyes open. Weight of cub, $3\frac{1}{4}$ pounds, length from nose to tip of tail $22\frac{1}{2}$ inches; tail slender and tapering; height at shoulder 9 inches; canines $\frac{2}{2}$, incisors $\frac{6}{6}$; conch of ears lying flat to the head; bald internally, outside covered with hair. Supposed to be the first hyæna bred in this country.

Camel (*Camelus dromedarius*). One calf was born January 16, 1873; period of gestation, twelve months, in this case twelve and a half months. About three hours after birth the calf was held up to suckle, the next day was able to get on its feet and nurse itself.— N. A. CONKLIN, *Director Central Park Menagerie*.

CANARIES AND HYACINTHS.—A lady visitor remarked that one

of our canaries had a bad cold, her quick ear having detected a wheezing sound like that of a catarrh. It had continued already for several days. Being myself very unpleasantly affected by the odor of some flowers, I guessed the cause to be the contiguity of the hyacinths growing in glasses, and now filling the room with perfume. These flowers, which were close to the cage of the sick bird, were now taken from the room and the bird showed immediate relief, and in a day was well.—S. LOCKWOOD, *February 14.*

PHOSPHORESCENCE.—Professor Panceri, of the University of Naples, has just published a memoir on this highly interesting subject, in the fifth volume of the *Atti della Reale Accademia delle Scienze fisiche e matematiche*, 1871, under the title “Gli Organi luminosi e la Luce delle Pennatule.” It consists of two parts, one anatomical, the other physiological. He notes the existence of special organs which have the power and apparently the function of producing phosphorescent light, and finds that the light is only emitted by the polyps and the zooids, while the phosphorescent organs, as he terms them, consist of eight “cordoni luminosi,” which are attached to the outside of the stomach of the polyps and zooids, and are prolonged in each case as far as their mouth-papillæ. These threads (cordoni) are principally composed of a tissue built up of vesicles or cells and possessing all the characters of fat; albuminoid cells are likewise met with in it. This fatty matter generates light, not only by the direct excitation of the polyps and the zooids themselves, but by excitation of the whole trunk of the Pennatula. In the latter case the author has made the remarkable discovery that the progress of the light developed in succession over the several parts of a polyp gave a striking indication of the direction, progress, and rapidity of the excitation applied to the Pennatula, and he has found these latter calculable, a fact of the greatest interest to physiologists. Professor Panceri further states that the phosphorescent substance produces light, after its removal from the body of the polyp, if subjected to mechanical treatment such as friction and compression, or the action of chemical agents, electricity or heat. And this is the case when the substance is extracted, not only from the living animal, but some short time after its death. The author, in his earlier investigations of the phosphorescence of other fatty

substances, considered the phenomenon due to their slow oxydation. He believes this holds good in the case of the "cordoni luminosi" of the Pennatula, and thinks it to a certain amount subject to the voluntary powers of the animal. He found similar phosphorescent substances in the epithelium of Medusae, and in Pholas he saw two distinct organs inside the mantle which are furnished with the power of becoming luminous. Some Chætopteri, Beroë and Pyrosoma were likewise examined, and a great similarity noticed in all these cases as regards the constitution of the phosphorescent substance. In the spectroscope the light exhibits one broad band like that given by monochromatic light, while, as is well known the phosphorescent light of *Lampyrus* and *Luciola* is polychromatic.— *The Academy*.

THE GAME BIRDS OF THE NORTHWEST.—The game birds of the northwest seem in a fair way to be thoroughly looked up. We notice a circular from Dr. Coues, published by command of General Terry, of the Department of Dakota, inviting the coöperation of all army officers serving in the Department, in the work of ascertaining the precise geographical distribution of feathered game, their times of arrival and departure, breeding resorts, habits, etc. This is to be incorporated in a report on the "Ornithology of the Northwest," to be published by the Department of the Interior, and forming one of the series issued by the U. S. Geological Survey of the Territories, in charge of Dr. F. V. Hayden. The undersigned respectfully solicits the coöperation of those of his brother officers who may be interested in a certain portion of his work.

With their friendly assistance, he hopes to largely increase, and render more precise, our present knowledge of the *Game Birds* inhabiting the region drained by the Missouri river and its tributaries. Under this head are included :

1. *Grouse* of several different species: the sharp-tailed grouse, or "chicken;" the pinnated grouse, or prairie-hen; the ruffed grouse, or "partridge;" the dusky or "mountain" grouse; the ptarmigan, or "snow" grouse; the sage-cock, cock-of-the-plains, and the quail.

2. *Wading Birds* of various kinds: wood-cock, snipe, plover, curlew and allied species.

3. *Water Fowls* of all sorts: swans, geese and ducks.

He desires to ascertain, with entire precision, the geographical

distribution of the resident species, the times of arrival and departure of the migrants, and the localities to which the summer visitants resort to breed.

It is hardly necessary to add, that each contribution to the forthcoming report would be accredited to its proper source. In order to be available for the object in view, manuscripts should be received not later than June next.—*Address* DR. E. COUES, U. S. A., *Fort Randall, Dakota Territory.*

GEOLOGY.

ON THE TUSK OF *LOXOLOPHODON CORNUTUS*.—Professor Marsh asserts that I have reversed the positions of the tusks of this species, placing that of the left side on the right, etc. This statement is not true, as I have carefully distinguished the sides in my description (*Short-footed Ungulata*, etc., p. 10). In my plate 2d the inner side is not represented as the outer, as the inner surfaces of attrition are omitted, and the external represented. Like his other charges this one results from a misapprehension. Having seen a photograph in which, for the assistance of the artist, the left tusk was taken on the right side, he at once concludes that my lithograph represents it in the same position.—E. D. COPE.

ANTHROPOLOGY.

EXISTENCE OF MAN IN THE MIOCENE.—I have received a letter from Mr. Edmund Calvert, in which he informs me that his brother, Mr. Frank Calvert, has recently discovered, near the Dardanelles, what he regards as conclusive evidence of the existence of man during the Miocene period. Mr. Calvert had previously sent me some drawings of bones and shells from the strata in question, which Mr. Busk and Mr. Gwyn Jeffreys were good enough to examine for me. He has now met with a fragment of a bone, probably belonging either to the *Dinotherium* or a *Mastodon*, on the convex side of which is engraved a representation of a horned quadruped, "with arched neck, lozenge-shaped chest, long body, straight fore legs and broad feet." There are also, he says, traces of seven or eight other figures, which, however, are nearly obliterated. He informs me that in the same stratum he has also found a flint flake, and several bones broken as if for the extraction of marrow.